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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,839	06/20/2006	Akiyasu Nozue	080306.56872US	4231
23911 7590 01/29/2010 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				
EXAMINER				
DIAZ, THOMAS C				
ART UNIT		PAPER NUMBER		
3656				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,839

Applicant(s)

NOZUE ET AL.

Examiner

THOMAS DIAZ

Art Unit

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2010.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 03 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/04/2010 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maezawa et al. (JP 2000-336696; using machine translation from JPL website).

Regarding claim 1,

Applicant claims a swing mechanism (figs. 1-4) comprising a swing frame (fig.2, 5), An inner race (fig.4, 3) having an internal gear (fig.4, internal gear that meshes with 6) on an inner circumferential portion thereof and mounted on a side of an

undercarriage (swing frame is part of the undercarriage), an outer race (fig.4, 4) rotatably arranged surrounding said inner race and provided with said swing frame mounted thereon (fig.4, swing frame is mounted on the outer race), a pinion (fig.4, 6) inserted through a pinion insertion hole (see fig.4, hole in the swing frame through which the pinion is inserted) formed in said swing frame and maintained in meshing engagement with said internal gear, a pinion drive device (fig.4, 7; the slewing gear comprises the pinion drive device. Additionally, it is well-known that the pinion would be attached to a drive device.) for rotationally driving said pinion, a pin fit-in hole (fig.2, 28 and 26) arranged in said swing frame such that a knock pin (fig.2, 21) fixed on said outer race is fitted in said pin fit-in hole to position said swing frame, characterized in that a pin fit-in hole portion (fig.2, portion having the pin fit in hole) through which said pin fit-in hole is formed is arranged on said swing frame at a location of a place of meshing engagement (see fig.1 and 4; the pin fit in hole portions are near the meshing engagements) between said pinion and said internal gear such that said pin fit-in hole portion extends toward said pinion insertion hole (fig.1-4; as defined the pin fit in hole portion extends towards the pinion insertion hole)

Maezawa et al. discloses that said pin fit-in hole is located on a line 31 that is **preferably arranged at an angle of 30 degrees or less with respect to line 18**, which passes through both the center of rotation of the pinion and the outer race.

Maezawa et al. discloses the claimed invention except for explicitly stating that the pin fit-in hole is located on a line that extends through a center of rotation of said outer race and a center of rotation of said pinion. It would have been obvious to one

having ordinary skill in the art at the time the invention was made to optimize the angle of the pin fit-in hole relative to line 18 in order to find the best positioning of the swing mechanism, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Additionally, it would have been obvious to one having ordinary skill in the art to try an angle of zero according to the teachings of Maezawa et al., such that as a result the pin fit-in hole would be located on line 18 which travels through both centers of rotation. As recited in the machine translation of the JP '696 reference, the reference clearly contemplates the need to adjust the backlash in the gearing and to improve the positioning accuracy of the work machine and as discussed the specification, one way it would accomplish this is by setting the location of pin 21 to a position of 30 degrees or less with respect to a main line 18 which passes through both centers of rotation. Thus one of ordinary skill would understand that an angle of 0 degrees could be used in order to optimize the backlash reduction depending on the working conditions. Furthermore, the translation even discloses a condition where it would be convenient to place pin 21 on the main connecting line (paragraph 34 of the machine translation).

Regarding claim 2,

Maezawa et al. discloses another knock pin (fig.2, 20) is arranged between said swing frame and said pinion drive device,

Maezawa et al. discloses the knock pin for positioning said pinion drive is located on line 24 that is preferably arranged at an angle of 30 degrees or less with respect to line

18, which passes through both the center of rotation of the pinion and the outer race. Maezawa et al. discloses the claimed invention except for explicitly stating that the center of said knock pin for positioning said pinion drive is located on a line that extends through a center of rotation of said outer race and a center of rotation of said pinion. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the angle of the center of said knock pin for positioning said pinion drive relative to line 18 in order to find the best positioning of the swing mechanism, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Additionally, it would have been obvious to one having ordinary skill in the art to try an angle of zero according to the teachings of Maezawa et al., such that as a result the center of said knock pin for positioning said pinion drive would be located on line 18 which travels through both centers of rotation.

As a result of the above modification, Maezawa et al. discloses a center of said knock pin for positioning said swing frame being fitted in said pin fit in hole and a center of a knock pin for positioning said pinion drive device are each located on a line that extends through said center of rotation of said outer race and said center of rotation of said pinion (fig.1, when the angle of alpha and gamma are set to zero, both centers would lie on line 18).

Regarding claim 3,

Maezawa et al. discloses said pin fit-in hole is arranged in a center frame (the pin fit in hole is within a center frame being the part of the swing frame near the center) of said swing frame.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maezawa et al. (JP 2000-336696; using machine translation from JPL website) in view of Yamamoto et al. (JP 09268600).

Regarding claim 4,

Maezawa et al. discloses a pin fit-in hole in which said another knock pin for positioning said pinion drive device is fitted is arranged through a flange portion of said pinion drive device (see fig.2, pin fit in hole 22 is fitted through flange portion of the pinion drive device 7) .

Maezawa et al. fails to disclose that the pin fit in hole is arranged through a bracket for mounting said pinion drive device.

Yamamoto et al. teaches the use of a bracket (fig.3, 16) for mounting a pinion drive device (fig.3, 11) through which there is arranged pin fit in holes (fig.11; holes of 14 and 15); for the purpose of providing the predictable result of providing extra support to the pinion drive device since there would be more surface area for the pin fit in hole and thus more surface area for the knock pin.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to add the bracket with the pin fit in hole as taught by Yamamoto et al. to the swing mechanism disclosed by Maezawa et al. for the purpose of providing the

predictable result of providing extra support to the pinion drive device since there would be more surface area for the pin fit in hole and thus more surface area for the knock pin.

Response to Arguments

Applicant's arguments filed 12/03/2009 have been fully considered but they are not persuasive.

As mentioned in the advisory action sent out 12/16/2009, the following response addresses the arguments.

Applicant argues that there is no pin fit-in hole portion that extends toward the pinion insertion hole. However, a "pin fit in hole portion" can be interpreted as any structure either that is part of the hole or holds the hole. As a result of this interpretation, (see figs. 1 and 2) there are at least some portions (sections) of element 4 for example, that extend toward or in the direction of the pinion insertion hole. In other words, as long as some section or part of the elements holding the pinion insertion hole extend even remotely in the direction of the hole, that is sufficient to read on the claim as broadly interpreted. Unless the "portion" is more thoroughly defined the prior art still reads on the claimed invention.

Applicant also argues that there is no substantial record evidence to support a prima facie case of obviousness with regard to the claimed location of the pin fit-in hole on a line that extends through a center of rotation of the outer race and a center of pinion rotation. As recited in the machine translation of the JP '696 reference, the reference clearly contemplates the need to adjust the backlash in the gearing and to

improve the positioning accuracy of the work machine and as discussed the specification, one way it would accomplish this is by setting the location of pin 21 to a position of 30 degrees or less with respect to a main line 18 which passes through both centers of rotation. Thus one of ordinary skill would understand that an angle of 0 degrees could be used in order to optimize the backlash reduction depending on the working conditions. Furthermore, the translation even discloses a condition where it would be convenient to place pin 21 on the main connecting line (paragraph 34 of the machine translation).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS DIAZ whose telephone number is (571)270-5461. The examiner can normally be reached on Monday-Friday 8:30am to 5:00pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas Diaz/
Examiner, Art Unit 3656

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3656